

U.S. Appl. Serial No. 09/913,977

Amendments to the Claims

Claim 1 (currently amended): A filter cartridge for filtering a slurry composition which comprises:

a hollow housing[[:]] having a first end cap including an inlet[[:]] and a second end cap including an outlet;

an annular spacer having an open portion and a solid portion and a nonwoven depth filter material of polymeric fibers inside the housing, said depth filter material having a thickness to retain undesirably large particles of said slurry while permitting passage there through of particles of said slurry within a desired size range, said depth filter material having progressively smaller micron particle retention in the direction of fluid flow, said retention greatest adjacent the fluid outlet wherein said filter material is formed of at least two segments and separated by said annular spacer;

said hollow housing being free of an open void volume having a height greater than about 1 inch of not greater than 1 inch in height to prevent separation of solid particles from the slurry composition and provide substantially uniform distribution of slurry over atop surface of the depth filter material, said open void volume upstream of said depth filter and the ratio of the height of said depth filter segments to the height of said annular spacers being between about 1:1 and about 5:1.

Claim 2 (previously presented): The filter cartridge of claim 1 wherein said annular spacers have a thickness less than about 0.12 inches.

Claim 3 (previously presented): The filter cartridge of claim 2 wherein said depth filter segments comprise a wound depth filter comprising nonwoven fibers.

Claim 4 (previously presented): The filter cartridge of claim 2 wherein said depth filter segments comprise a stack of sheets wherein each sheet comprises nonwoven fibers.

Claim 5 (previously presented): The filter cartridge of claim 2 wherein said depth filter segments comprise a fibrous mass of nonwoven polymeric fibers secured together by mechanical entanglement of the fibers.

Claim 6 (previously presented): The filter cartridge of any one of claims 2, 3, 4 or 5 wherein the ratio of depth filter segment thickness to spacer thickness is from about 1.1:1 to about 5:1.

Claim 7 (previously presented): The filter cartridge of claim 6 wherein the ratio of depth filter segment thickness to spacer thickness is from about 1.5:1 to about 3:1.

Claim 8 (previously presented): The filter cartridge of any one of Claims 1,2,3,4 or 5 wherein the housing is free of an open void volume downstream of said depth filter.

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Claim 9 (previously presented): The filter cartridge of any one of Claims 1,2,3,4 or 5 wherein the depth filter inserted into the housing is precompressed into its final length.

Claim 10-14 (canceled)

Claim 15 (previously presented): The filter cartridge of any one of claims 1, 2, 3, 4 or 5 wherein the media has a surface treatment selected from the group consisting of hydrophobicity, hydrophilicity or a positive or negative charge.

Claim 16 (previously presented): A process for filtering a slurry which comprises passing a slurry through a filter cartridge as defined in any one of claims 1, 2, 3, 4 or 5 and; recovering a filtered slurry from said cartridge.

Claim 17 (original): The process of Claim 16, wherein said slurry is selected from the group consisting of a silica-based slurry, an alumina-based slurry, a ceria-based slurry, a diamond-based slurry, a MnO₂- based slurry, a cell broth, a photoresist chemical, a fermentation liquid, blood, a blood fraction and a transgenic liquid.

Claims 18-27 (canceled)

Claim 28 (new): The filter cartridge of claim 1 wherein the first endcap has ribs, said ribs distribute incoming fluid feed over atop surface of the depth filter material, said ribs have a height that prevents separation of solid particles from the slurry to be filtered.

Claim 29 (new): The filter cartridge of claim 2 wherein the first endcap has ribs, said ribs distribute incoming fluid feed over atop surface of the depth filter material, said ribs have a height that prevents separation of solid particles from the slurry to be filtered.

Claim 30 (new): The filter cartridge of claim 4 wherein the first endcap has ribs, said ribs distribute incoming fluid feed over atop surface of the depth filter material, said ribs have a height that prevents separation of solid particles from the slurry to be filtered.

Claim 31 (new): The filter cartridge of claim 1 wherein the first endcap and the second endcap have ribs, said ribs distribute incoming fluid feed over atop surface of the depth filter material, said ribs have a height that prevents separation of solid particles from the slurry to be filtered.